

Preliminary Air Monitoring Summary

CR-251 Event

Prepared On Behalf Of: Colonial Pipeline

Prepared By:

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CTEH Project #108641

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Introduction

On October 31, 2016, the Center for Toxicology and Environmental Health (CTEH®) was contacted by Colonial Pipeline to initiate air monitoring for gasoline, its constituents, and combustion products. This submittal summarizes real-time air monitoring data recorded by CTEH® personnel between 11/04/2016 06:00 CDT and 11/05/2016 06:00 CDT in accordance with the CTEH® Air Sampling and Analysis Plan. Please note that all real-time data in this report has not undergone full QA/QC (quality assurance/quality control) analysis. It has been provided expeditiously to on-site contractors for informational purposes only.

Manually-Logged Real-Time Air Monitoring

Real-time air monitoring was conducted to evaluate the potential airborne presence of gasoline-associated constituents, if any, during response operations. All instrumentation was calibrated at least once per day or per manufacturer's recommendations. Target analytes were measured as total volatile organic compounds (VOCs), benzene, xylene, toluene, gasoline, carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM_{2.5}), and atmospheric flammability as percentage of the lower explosive limit (%LEL) using hand-held instruments such as RAESystems® MultiRAE Pro/Plus as well as Gastec® colorimetric detection tubes.

Table 1 summarizes the manually-logged real-time air monitoring readings. Maps depicting the site and locations of recorded readings are available in **Attachment 1**.

Table 1: Summary of Manually-Logged Real-Time Air Monitoring Results¹
November 4, 2016 06:00 CDT – November 5, 2016 06:00 CDT

Location	Analyte	Number of Readings	Number of Detections	Concentration Range ^{2,3}	Health Based Action Level
Community	Benzene	1	0	< 0.05 ppm	0.05 ppm
	Gasoline	1	0	< 5 ppm	0.02 ppm
	%LEL	45	0	< 1 %	3 %
	PM _{2.5}	41	41	0.012 – 0.146 mg/m ³	0.138 mg/m ³
	Toluene	1	0	< 1ppm	2.5 ppm
	VOCs	45	14	0.3 – 3.5 ppm	100 ppm
	Xylene	1	0	< 1 ppm	0.5 ppm
Worker Exposure	Benzene	75	29	0.05 -0.8 ppm	0.5 ppm
	Carbon Monoxide (CO)	1	0	< 1 ppm	25 ppm
	%LEL	276	4	3 - 8 %	3 ppm
	PM _{2.5}	60	60	0.011 – 0.335 mg/m ³	0.351 mg/m ³
	Sulfur Dioxide (SO ₂)	1	0	< 0.1 ppm	0.25 ppm
	VOCs	296	173	0.1 – 405 ppm	300 ppm

¹Please Note: The data displayed in the above table has not undergone complete QC analysis and is presented in a preliminary format.

²Maximum detections preceded by the "<" symbol are considered non-detections below the instrument limit of detection (LoD) value to the right.

³Numbers are the raw values, no correction factors have been applied.

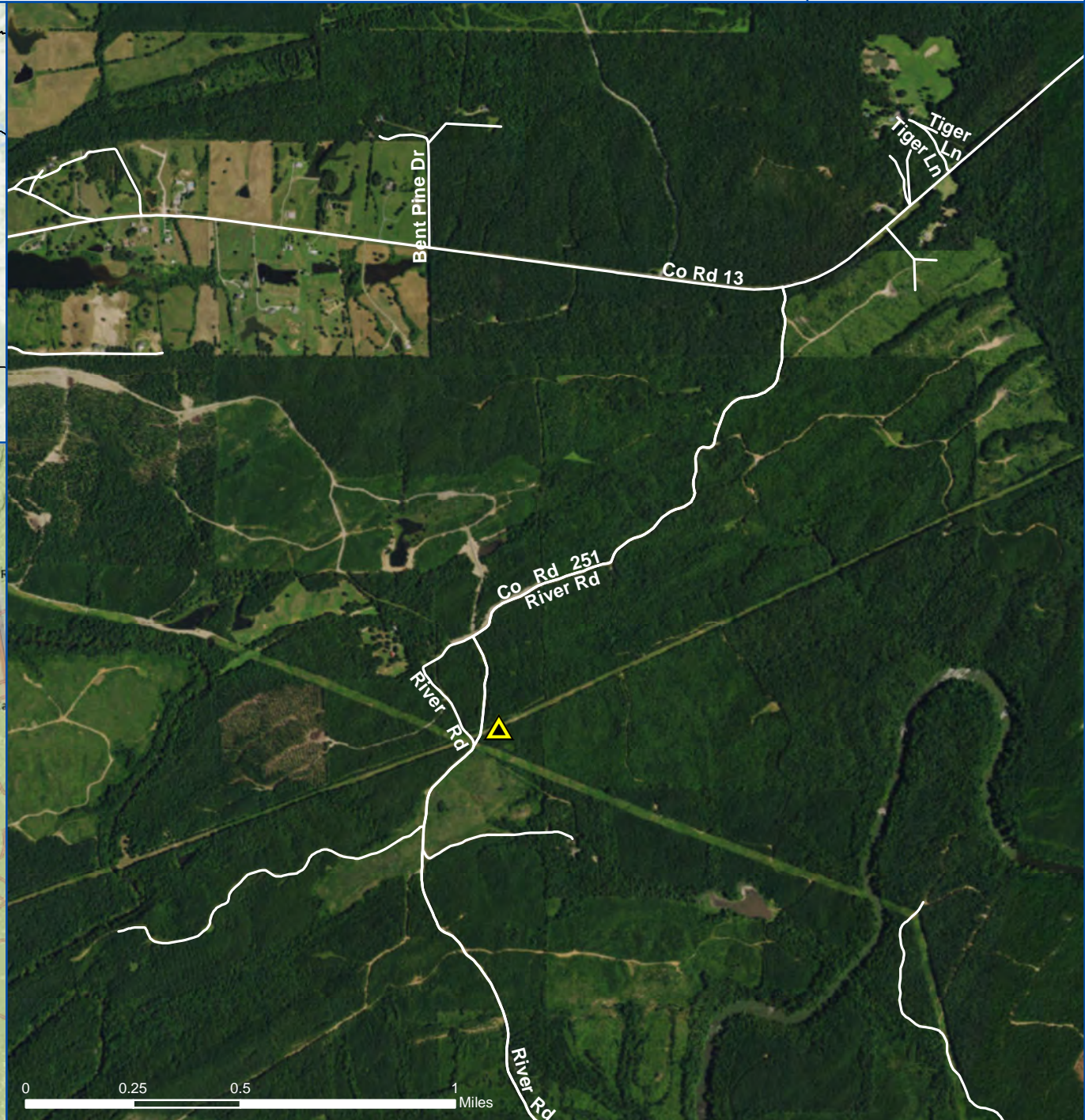
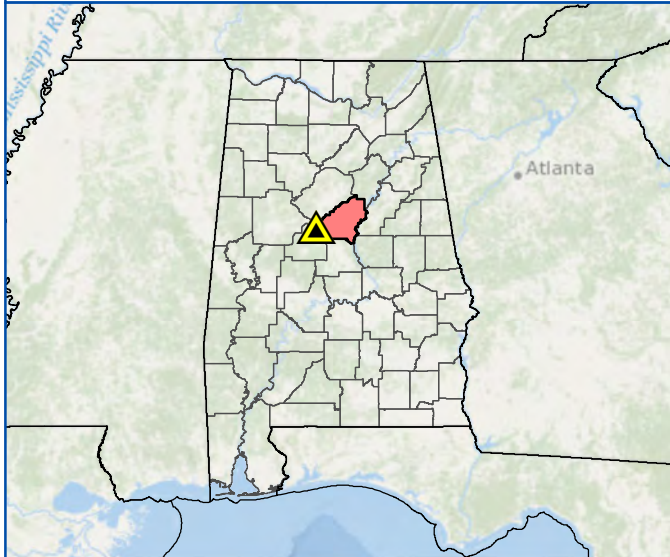
Weather Conditions

Weather conditions were acquired from the National Weather Service meteorological station located at the Bessemer Airport (KEY). Wind direction for the report period was predominantly from the north at 0 – 15 mph. A wind rose depicting wind speed and direction is available in **Attachment 2**.

Table 3: Weather Conditions for Report Period

Observation	Range	Average
Relative Humidity	28 - 93 %	56 %
Temperature	48.9 – 80.1 °F	60.0 °F
Pressure	30.17 – 30.34 inches Hg	30.25 inches Hg

Attachment 1: Site Maps





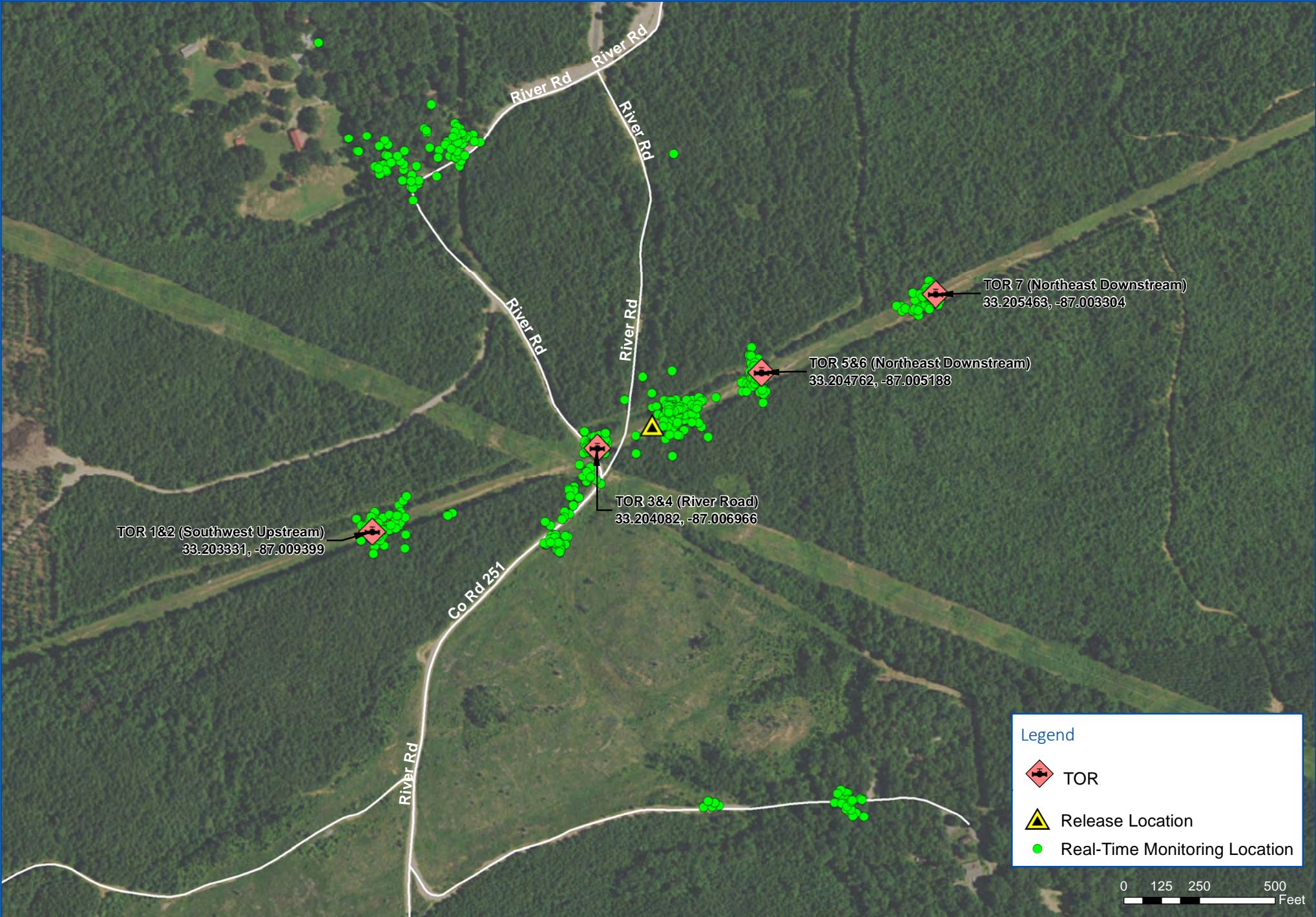


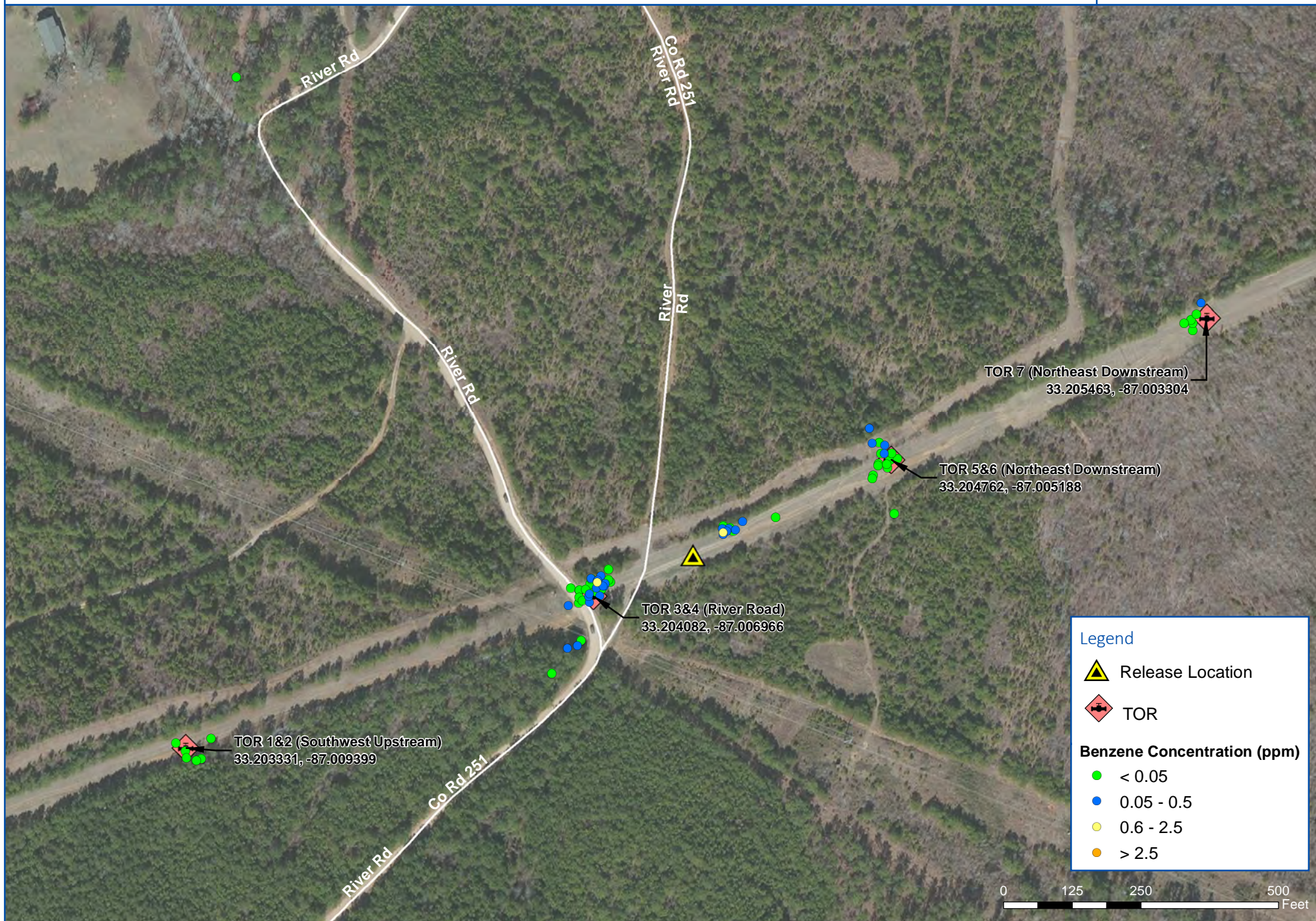
Manually-Logged Real-Time Air Monitoring Locations

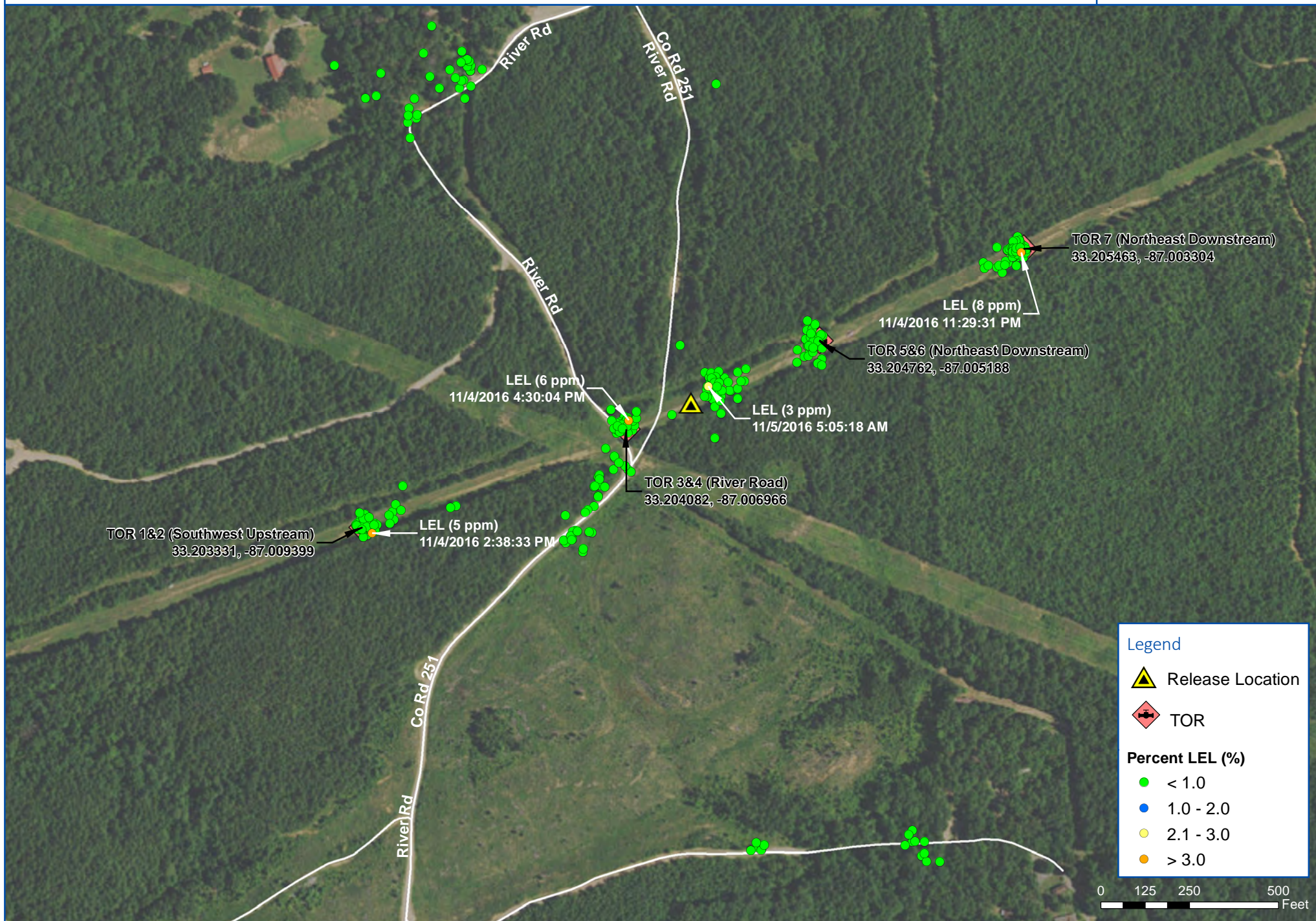
CR-251 Event November 4, 2016 06:00 - November 5, 2016 06:00

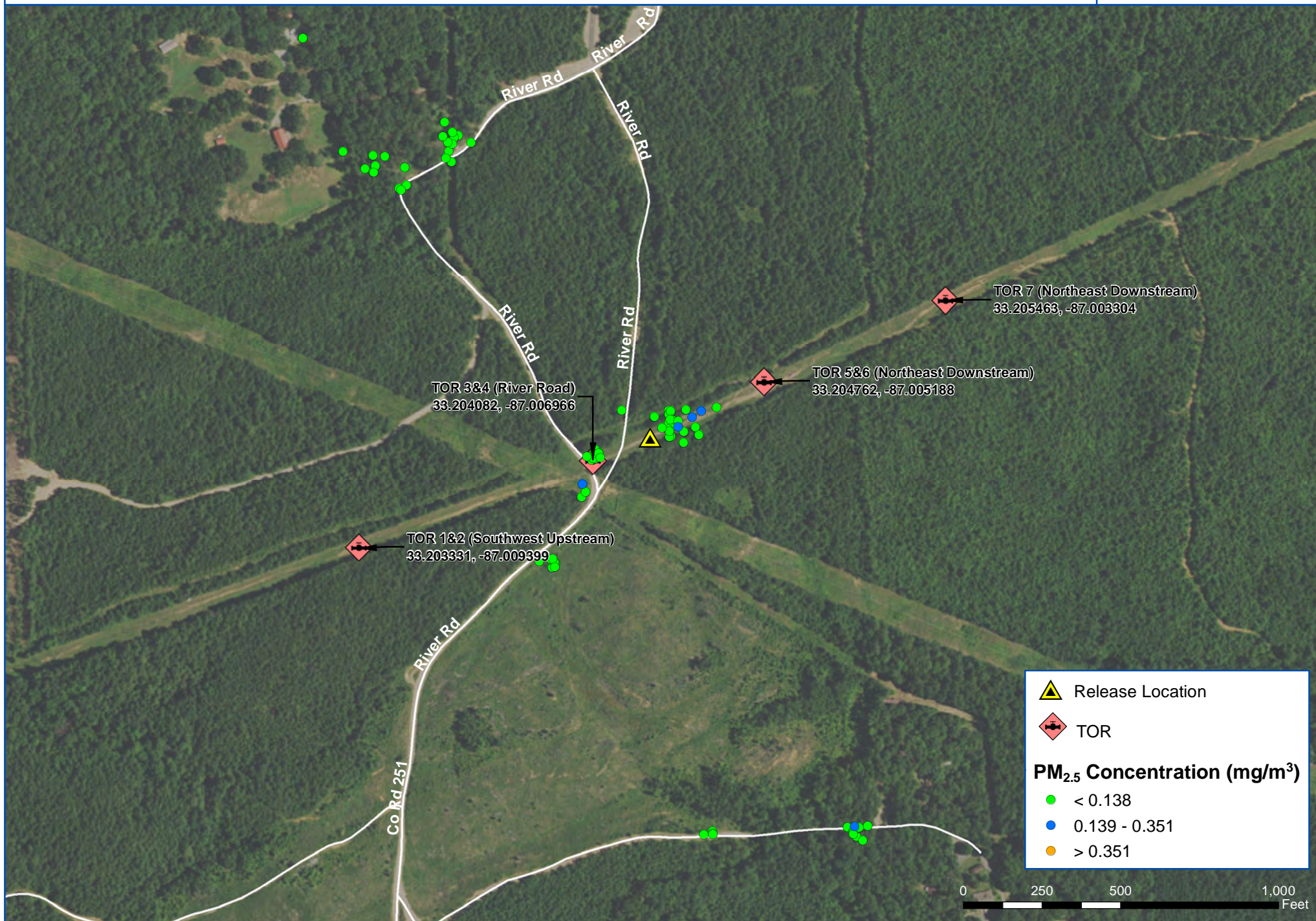


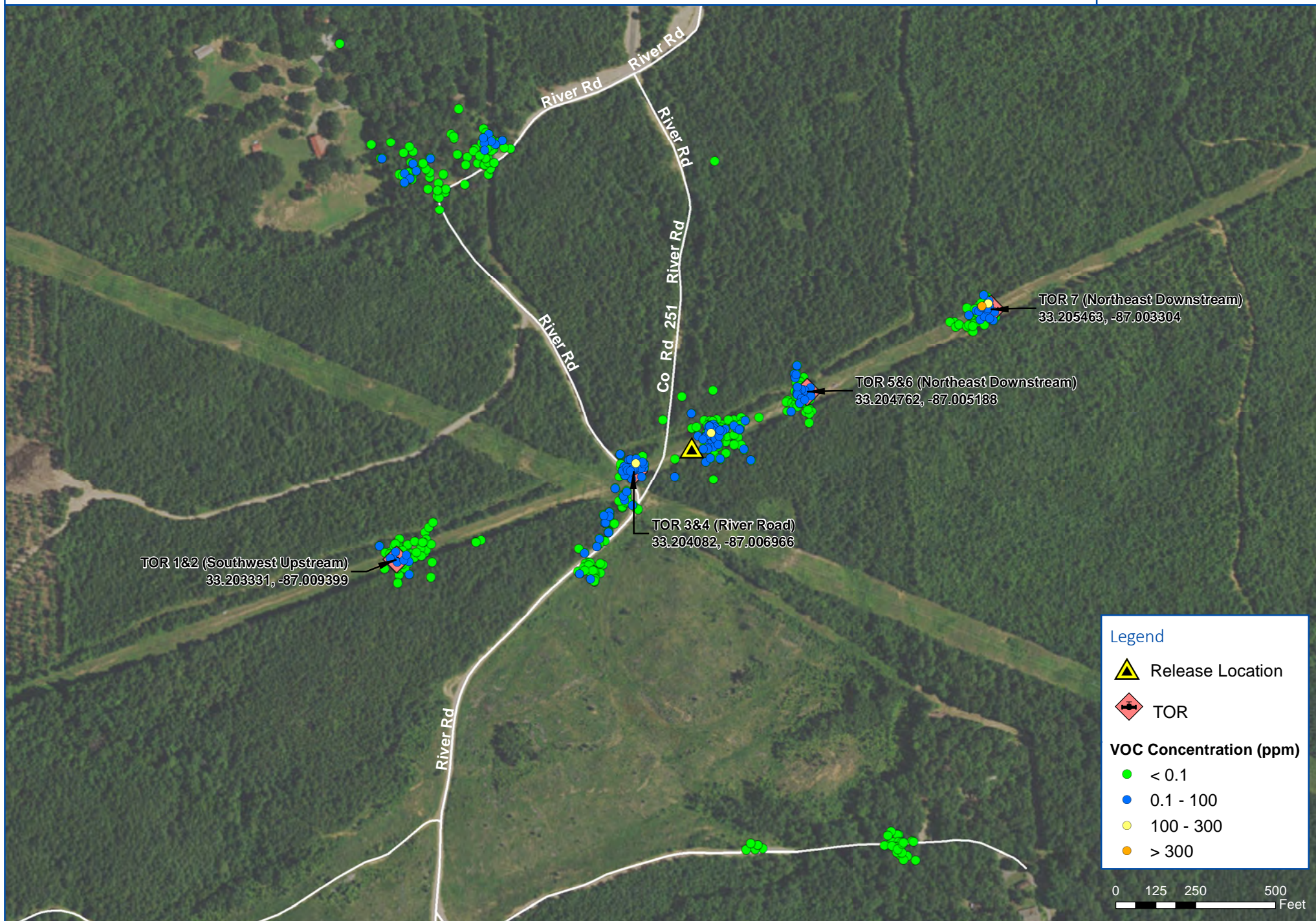
Project: 108641
Client: Colonial
City: Helena, AL
County: Shelby











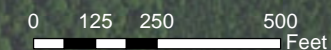
Legend

Release Location

TOR

VOC Concentration (ppm)

- < 0.1
- 0.1 - 100
- 100 - 300
- > 300



Attachment 2: Weather Conditions

Weather Station: KEKY 2016-11-04 to 2016-11-05

